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| APPLICATION NO.  | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO.          |
|--|-------------|----------------------|---------------------|---------------------------|
| 10/035,765   | 12/24/2001  | Norman C. Pyle       | 10011327-1          | 3822                      |
| 22879  | 7590        | 09/07/2005           | EXAMINER            |                           |
| HEWLETT PACKARD COMPANY<br>P O BOX 272400, 3404 E. HARMONY ROAD<br>INTELLECTUAL PROPERTY ADMINISTRATION<br>FORT COLLINS, CO 80527-2400 |             |                      |                     | DURNFORD GESZVAIN, DILLON |
| ART UNIT   |             | PAPER NUMBER         |                     |                           |
|  |             |                      |                     | 2615                      |

DATE MAILED: 09/07/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

|                              |                                      |                     |  |
|------------------------------|--------------------------------------|---------------------|--|
| <b>Office Action Summary</b> | <b>Application No.</b>               | <b>Applicant(s)</b> |  |
|                              | 10/035,765                           | PYLE, NORMAN C.     |  |
|                              | Examiner<br>Dillon Durnford-Geszvain | Art Unit<br>2615    |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

1) Responsive to communication(s) filed on 24 December 2001.  
 2a) This action is FINAL.                    2b) This action is non-final.  
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

4) Claim(s) 1-20 is/are pending in the application.  
 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
 5) Claim(s) \_\_\_\_\_ is/are allowed.  
 6) Claim(s) 1-20 is/are rejected.  
 7) Claim(s) \_\_\_\_\_ is/are objected to.  
 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

9) The specification is objected to by the Examiner.  
 10) The drawing(s) filed on 12/24/2005 is/are: a) accepted or b) objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) All    b) Some \* c) None of:  
 1. Certified copies of the priority documents have been received.  
 2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

|  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
|  | 6) <input type="checkbox"/> Other: _____                                    |

## DETAILED ACTION

### *Specification*

1. The disclosure is objected to because of the following informalities: on page 2 line 27 "can typically reviewed" should be --can typically be reviewed--. On page 7 line 11 "CDD imaging" should be --CCD imaging--.

Appropriate correction is required.

### *Claim Objections*

2. Claims **5, 7 and 18-20** are objected to because of the following informalities: as to claim **5**, in line 3 "wherein storage" should be --wherein the storage--. As to claim **7**, in line 13 "employ a" should be --employing a--. As to claim **18**, in line 14 "digital camera" should be --digital image capture device--. Claims **19 and 20** are objected to similarly; "digital camera" should be --digital image capture device--. Appropriate correction is required.

### *Claim Rejections - 35 USC § 112*

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
4. Claim **12** is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

5. Claim 12 recites the limitation "the enable signal" in --line 12--. There is insufficient antecedent basis for this limitation in the claim.

***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. Claims 1-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 6,809,759 (Chiang) in view of US 5,365,269 (Holmes et al.).

As to claim 1, Chiang teaches a method for controlling exposure time in a digital image capture device comprising the steps of: when a user-controlled exposure mode is selected and a start exposure signal is asserted, capturing a first image until a terminate exposure signal is asserted (Column 1 lines 21-22). Note that this is in the disclosure of the prior art and that what Chiang teaches is a camera of the prior art with additional functionality. Therefore any feature in the prior art, such as manually controlled exposure, is taught in Chiang. What Chiang does not teach is capturing a series of images in the manually controlled exposure mode and adding each image to a running total image and displaying the running total image.

Holmes et al. teaches a method wherein when a start exposure signal is asserted,

- a) capturing a first image and assigning the first image to a running total image  
(Column 5 lines 44-49);
- b) displaying the running total image (Column 5 lines 22-23, note that the image is read out of RAM 78 which has an accumulated image area 78b which stores a running total image; it is this image which is read out of RAM 78 as this is the image which the user would be interested in seeing);
- c) capturing a next image (Column 5 lines 52-54);
- d) adding the next image to the running total image (Column 6 lines 11-16);
- e) displaying the running total image (see the note above for step b); and
- f) repeating steps (c) to (e) until a terminate exposure signal is asserted (Column 6 lines 39-43).

What Holmes et al. does not teach is a user controlled exposure mode in which the user asserts the start and terminate exposure signals.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have used the method taught by Holmes et al. of taking several images of a low light scene and adding and displaying them as they are taken with the user controlled exposure control of Chiang as this would allow a user to observe the image of the object they are photographing while they are photographing it to insure that a quality image is being recorded.

As to claim 2, see the rejection of claim 1 and note that Holmes et al. further

teaches a method wherein the digital image capture device include an image sensor; wherein the step of capturing the first image includes the steps of

a\_1) exposing the image sensor to light (Column 3 lines 61-65);

a\_2) reading out an analog value from the image sensor (Column 4 lines 5-7);

and

a\_3) converting the analog value to a corresponding digital value (Column 4 lines 5-9); and wherein the step of capturing the next image includes the steps of

c\_1) exposing the image sensor to light (Column 3 lines 61-65);

c\_2) reading out an analog value from the image sensor (Column 4 lines 5-7);

and

c\_3) converting the analog value to a corresponding digital value (Column 4 lines 5-9).

As to claim 3, see the rejection of claim 1 and note that Holmes et al. further teaches a method wherein the digital image capture device includes a display 38; and wherein the step of displaying the running total image includes displaying the running total image on the display (This is inherent and was discussed above under the rejection of claim 1 step b).

As to claim 4, see the rejection of claim 1 and note that Holmes et al. further teaches a method further comprising the step of transferring a final image to a storage media (this step is inherent to the system described by Holmes et al. and was omitted

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from the specification, however, it is clear that this step was contemplated by Holmes et al. as there is a cable 34 connecting the CPU 28 to a host 32 which has disk drives 44 and 46 which are capable of storing final pictures on storage media. The final images would either be stored using these disk drives or would be stored directly on the RAM 78 of the CPU 28).

As to claim 5, see the rejection of claim 4 and note that Holmes et al. teaches a method as in claim 4 wherein the storage media is one of a removable media (floppy disk inserted into disk drive 44 or 46), volatile memory (RAM 78), and non-volatile memory (the hard drive of computer 32 [not shown]).

As to claim 6, see the rejection of claim 1 and note that the Examiner takes Official Notice that the further step wherein the asserted terminate exposure signal is a de-asserted start exposure signal; and wherein the start exposure signal is asserted and de-asserted by employing a cable release is old and well known. The bulb or manual exposure taught by Chiang is generally controlled by a shutter button being depressed (start exposure signal asserted) for as long as a user wants to expose the film or image sensor and then releasing the release (de-asserting the start exposure signal) when the user wishes to terminate the exposure. A cable release allows the user to perform this operation remotely using mechanical means attached to the camera body, this is also old and well known in the art. Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to have used a cable

release to assert and de-assert a start exposure signal in the digital image capture device taught by Chiang in view of Holmes et al. as this would allow a user to begin and end the exposure without disturbing the position of the camera, which is very important when taking a prolonged exposure as touching the camera can disturb it and cause the final image to be blurry.

As to claim 7, see the rejection of claim 1 and note that Chiang teaches a method wherein the step of asserting the start exposure signal includes the step of asserting the start exposure signal by employing a remote control 20 (Column 1 lines 19-22); and wherein the step of asserting the terminate exposure signal includes the step of asserting the terminate exposure signal by employing a remote control 20 (Column 1 lines 19-22).

Note that if the remote control were used to place the camera into manual exposure control mode it could then be used to assert the start and terminate exposure signals.

As to claim 8, see the rejection of claim 7 and note that Chiang teaches the remote control using one of an infrared link, a radio frequency link (Column 2 line 46), and an audio link.

As to claim 9, see the rejection of claim 7 and note that Chiang teaches a method wherein the digital image capture device is a digital camera 10 (Fig. 1 and Column 2

line 31).

As to claim 10, Chiang teaches a digital image capture device that has a user-controlled exposure mode comprising:

- a) a display 22 for displaying images (Column 4 lines 46-47); and
- b) a user-controlled exposure mechanism 28 coupled to the display (Fig. 2) for receiving a start exposure signal and a terminate exposure signal (Column 4 lines 61-62), responsive to the start exposure signal for beginning an exposure, and responsive to a terminate exposure signal for terminating the exposure (these steps are inherent in a user controlled exposure mode such as the bulb exposure mode taught in Column 1 lines 21-22).

What Chiang does not teach is providing visual feedback during the exposure through the display.

However, Holmes et al. as described above in the rejection of claim 1 step b, provides visual feedback of a developing picture through a display. Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to have added the feature of providing visual feedback as taught by Holmes et al. to the user controlled exposure mode taught by Chiang as this would allow the user to decide if the exposure time is sufficient by observing the image that will be recorded on the display as it is developing.

As to claim 11, see the rejection of claim 10 and note that Chiang further teaches

a digital image capture device further comprising: an enable signal for enabling the user-controlled exposure mechanism and setting the digital camera into a user-controlled exposure mode (Column 4 lines 47-49).

As to claim 12, see the rejection of claim 10 and note that providing one button for exposure and another button for the exposure setting is an obvious variation that would have been considered by Chiang. Furthermore, Chiang does not specify the number of buttons on the control panel 28 or how the interface would work. Providing Separate buttons allows the user to more easily control the functioning of the camera.

Note that the above rejection was made in light of the Examiners best understanding of the limitations of claim.

As to claim 13, see the rejection of claim 12 and note that providing yet another button for the terminate exposure signal is an obvious variation which would have been considered by Chiang as this allows for easier design of the hardware of the device as each button need only serve one purpose.

As to claim 14, see the rejection of claim 10 and note that in light of the rejection of claim 10, Chiang teaches a user-controlled exposure mechanism 20 including: a visual feedback module 22 for providing visual feedback during the exposure through the display (Column 4 lines 46-47).

As to claim 15, see the rejection of claim 10 and note that Chiang further teaches that the digital image capture device is a digital camera 10 (Column 2 line 29).

As to claim 16, Chiang teaches a digital image capture device 10 that has a user-controlled exposure mode (Column 1 lines 21-22) comprising:

- a) means for displaying images (Column 4 lines 46-47); and
- b) user-controlled exposure means coupled to the display for receiving a start exposure signal and a terminate exposure signal (Fig. 2 and Column 4 lines 61-62 in light of the fact that the camera has and is in a user controlled exposure mode both a start and terminate exposure signal must be present), responsive to the start exposure signal for beginning an exposure, and responsive to a terminate exposure signal for terminating the exposure (these steps are inherent when the camera is in the user controlled exposure mode as described above).

What Chiang does not teach is providing immediate visual feedback during the exposure through the display. However, as discussed above Holmes et al. teaches a means for providing immediate visual feedback during the exposure through the display. Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to have added the means for providing immediate visual feedback to the user during exposure as taught by Holmes to the digital image capture device taught by Chiang as this would allow a user to gauge when the proper amount of exposure had been reached during image capture which eliminates the need to guess and the need to "bracket" a broad range of exposure times for later inspection.

As to claim 17, see the rejection of claim 16 and note that Chiang further teaches an enable signal for enabling the user-controlled exposure mechanism and setting the digital camera into a user-controlled exposure mode (Column 4 lines 47-49).

As to claim 18, see the rejection of claim 16 and note that Chiang further teaches

- c) first means for use by a user to assert a start exposure signal (Column 4 lines 61-62);
- d) second means for use by a user to assert a terminate exposure signal (this feature is inherent given the limitation in c); and
- e) third means for use by a user to set the digital camera into the user-controlled exposure mode (Column 4 lines 7-49).

As to claim 19, see the rejection of claim 18 and note that Chiang would have considered making the start exposure and terminate exposure means one single button as this allows the user to more easily understand how to use the manual exposure mode.

As to claim 20, see the rejection of claim 16 and note that Chiang further teaches a visual feedback means for providing visual feedback through the display (Column 4 lines 27-45). What Chiang does not teach is providing said visual feedback during exposure. However, as discussed above Holmes et al. teaches a means for providing

visual feedback during exposure. Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to have used the means taught by Holmes et al. of providing visual feedback during exposure to the device taught by Chiang et al. as this would allow the user to gage when the exposure time is sufficient and would eliminate guessing.

### ***Conclusion***

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. US pre-grant publication 2002/0012053 (Yoshida) teaches reducing the effects of a dark signal as well as teaching a manual exposure mode. US 4,920,371 (Kaneko) teaches a manual exposure mode using a cable release. US 5,926,216 (Nokuoba) teaches an image capture device which combines successive images. US 5,264,940 (Komiya et al.) teaches an image capture device that uses an accumulating circuit to provide a better quality image in certain conditions. US 6,489,992 (Savoye) teaches a device for imaging in low light environments in real time.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dillon Durnford-Geszvain whose telephone number is (571) 272-2829. The examiner can normally be reached on Monday through Friday 8 am to 5 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Ometz can be reached on (571) 272-7593. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Dillon Durnford-Geszvain

9/2/2005



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